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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,891	08/23/2001	Nobuo Sasaki	SCEI 3.0-081	1355
<div>530                      7590                      11/10/2004</div> <div>LERNER, DAVID, LITTENBERG, KRUMHOLZ &amp; MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090</div>				
<div>EXAMINER</div> <div>RAHMJOO, MANUCHER</div>				
<div>ART UNIT                      PAPER NUMBER</div> <div>2676</div>				

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

**Application No.**

09/935,891

**Applicant(s)**

SASAKI ET AL.

**Examiner**

Mike Rahmjoo

**Art Unit**

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 29-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 29-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 4 line 17 on page 5 recites "...ideal straight line..." and line 19 of the same page recites "... line part is curved...". It is not clear how any approximation can be made while the ideal line is straight and curved at the same time.

Claims 10 and 16 have similar rejections.

Claims 5-6, 11-12, and 17- 18 are indefinite because they depend on indefinite antecedent claims.

Further clarification of above and other possible claims are respectfully requested.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2676

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 3- 7, 9- 13, 15- 20, 30, 31 and 33- 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Naoi et al , US Patent 6,683,617, hereinafter, Naoi.

As per claims 1, 7, 13, 19- 20, 30- 31, and 33- 38 Naoi teaches extracting means for extracting data representing a predetermined line part or visually important portion of an object depicted in a three dimensional image from data representing the three dimensional image see for example block 32 (subline segmenting unit 32) of fig 1 and column 6 lines 4- 9 and lines 24- 30 and; an image rendering means for rendering an the three dimensional image see for example unit 4 of fig 1; and antialiased image forming means for forming an antialiased image portion of the predetermined line part of the depicted object by antialiasing the extracted data see for example the abstract and column 11 lines 40- 50; and overwriting means for overwriting only the antialiased image portion onto a corresponding portion of the rendered image see for example

figure 7 block 105; and inherently teaches a computer readable storage medium (memory and HD) for storing a computer program for operating an apparatus to perform an image rendering method and distribution means (FD or CD) for distributing the computer program stored on the computer readable storage medium see for example the image processing apparatus of claim 1.

As per claims 3,9, and 15 Naoi teaches said image rendering means renders the three-dimensional image using polygon information that represents the three-dimensional image see for example unit 4 of figure 1, and said extracting means extracts the data representing the predetermined line part by extracting a corresponding part of the polygon information see for example block 32 of figure 1.

As per claims 4,10, and 16 Naoi teaches the predetermined line part passes through a plurality of pixels (see for example figures 2- 6 through the passage of sublines 1- 4 through the subpixels), and said antialiased image forming means generates pixel values for each of the plurality of pixels as a function of an occupancy value of that pixel (see for example column 6 lines 46- 51 which shows pixel values as a function of subpixels), the occupancy value of a respective pixel being based on a ratio of an area of an occupied portion of the pixel to an area of the pixel (see for example figures 6a- c with each having a certain ratio with associated percentage of occupancy), the area of the occupied portion of the pixel (see for example column 7 lines 18- 31) being based on an area occupied by a portion of the predetermined line part that passes through the pixel when the predetermined line part is a straight line and the area

of the occupied portion of the pixel being based on an area occupied by an ideal straight line segment which approximates the portion of the predetermined line part when the predetermined line part is curved.

As per claims 5,11, and 17 Naoi teaches the portion of the predetermined line part or the ideal straight-line segment forms an angle with an X-axis, and said antialiased image forming antialises a range of pixels along the X-axis when the angle is equal to or larger than a predetermined value; and antialises a range of pixels, along a Y axis that is orthogonal to the X-axis when the angle is smaller than the predetermined value see for example figures 2- 6 and also polygon 2 regions A and B of figure 3 which has representations of X and Y coordinates through each subpixel further making corresponding angles with said axis.

As per claims 6,12, and 18 Naoi teaches each of the plurality of pixels is divided into a matrix of sub-pixels, and said antialiased image forming means determines the area of the occupied portion of the pixel in units of sub-pixel- areas see for example figures 2- 6.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,8,14,21, 29, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoi in view of Kassila (US Patent 6,437,793).

As per claims 2,8,14,21, 29, and 32 Naoi does not teaches extracting means extracts data representing contour lines of the depicted object as the data representing the predetermined line part or extracts data representing the contour lines and contour candidates of the depicted object as the data representing the predetermined line part.

However, Kassila teaches extracting means extracts data representing contour lines of the rendered depicted object (see for example column 23 lines 28- 33) as the data representing the predetermined line part or extracts data representing the contour lines and contour candidates (see for example figure 41 the upper and lower loops of letter "B") of the depicted object as the data representing the predetermined line part see for example figure 41.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings Kassila into Naoi to further enhance the anti aliasing for the system and therefore produce a user friendly and versatile device .

### ***Response to Arguments***

Applicant's arguments filed 08/03/2004 have been fully considered but they are not persuasive.

As per applicant's remarks filed 08/03/2004, applicant has responded to only a portion of the 112 2<sup>nd</sup> paragraph rejections made earlier in the last office action and therefore the 112 2<sup>nd</sup> paragraph rejection still stands.

As per applicant's remarks on page 11, applicant argues that Naoi does not teach "extracting means for extracting data representing a predetermined line part of an object depicted in a three-dimensional image from data representing the three-dimensional image".

Examiner respectfully disagrees.

In response examiner points out that Naoi clearly teaches for example in column 5 lines 40- 55 that based on the results for each scanning line, the thus listed polygons are sorted in X-axis direction using a specific position of a polygon as the reference, wherein, in the sorted order, right and left edges of the polygons (**representations** of predetermined line parts of an object) and **Z-coordinate values** (distances from eyes , all depicting data of a **3D image**) are fetched (extracted data) for comparison, and the polygons to be displayed and their ranges (display sites) are determined in sequence in X-axis direction, which are then fed to the subsequent step.

As per applicant's remarks in the last paragraph of page 11 applicant argues Naoi "**describes antialiasing** the edge segment of the **polygon that approximates the three dimensional image**" and that Naoi does not suggest "forming an antialiased image portion of the predetermined line part of the depicted object".

Examiner respectfully disagrees.

In response examiner points out to for example column 11 lines 35- 40 and



figures 12- 13.

Examiner can not differentiate, from the arguments made above, that in view of the citation made as to figure 12- 13 and applicant's admittance to Naoi's description of "**antialiasing** the edge segment of the **polygon that approximates the three dimensional image**" why Naoi performs antialiasing involving 3D images and not make any formation of an antialiased image which is of contradictory basis.

Examiner would suggest making a clear and concise distinction of "extracting data" for further clarification .

Applicant argues on page 12 2<sup>nd</sup> paragraph that Naoi does suggest "overwriting only the antialiased image portion".

In response examiner points out to for example column 11 lines 35- 40 and figures 12- 13 wherein antialaising is applied to figure 13 and the prior citation made of the record figure 7 block 105.

Applicant argues on last paragraph of page 12 and first paragraph of page 13 that rejections of claims 2 and 29 is improper under 35 USC 102.

In response examiner points out that said claims are rejected under 35 USC 103 and that applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Applicant's argument made in the last paragraph of page 14 through 1<sup>st</sup> paragraph of page 15 are merely defining Kaasila' invention without further pointing out where the deficiencies fall and or why combination of the two prior arts is not made possible.

### **Inquiry**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (703) 305-5658. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (703) 308- 6829. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872- 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo

November 3, 2004



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